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ABSTRACT

Alcoholism research has independently focused on background characteristics and alcohol-related expectations, e.g., social and physical pleasure, reduced tension, and increased assertiveness, as important variables in identifying high risk individuals. To assess the utility of alcohol reinforcement expectations as predictors of drinking patterns, 321 male and female college students, aged 17-36, completed the Demographic Data Sheet, the Alcohol Expectancy Questionnaire, and the Customary Drinking Record. An analysis of the results showed that expectancies added to the predictive power of demographics in identifying drinking styles, especially for moderated-excessive and problematic drinkers. Ethnic background, age, generations in the United States and religiosity were the best demographic predictors, while relaxation/tension reduction was the single best expectancy related predictor. In subjects with reported heavy drinking patterns, expectancy of tension reduction was second only to the sex of the subject as a predictor. (BL)

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EXPECTANCIES VS. BACKGROUND IN THE PREDICTION OF ADULT DRINKING PATTERNS

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EXPECTANCIES VS. BACKGROUND IN THE
PREDICTIONS OF ADULT DRINKING PATTERNS

Alcohol-related expectancies have been shown to play a significant role in the behavioral effects of alcohol (Marlatt and Rohsenow, 1980). More recently, the specific content of alcohol expectancies has been delineated (Brown, Goldman, Inn & Anderson, 1980; Southwick, Steele, Marlatt and Lindell, 1981). Responses to the Alcohol Expectancy Questionnaire (AEQ) have been found to relate to drinking habits of nonalcoholic adults (Brown et al., 1980), participation in alcohol treatment programs and prognosis for abstinence (Brown & Goldman, 1981), and alcoholic drinking patterns (Brown, 1983). Further, in medical settings male alcoholic and nonalcoholic patients may be differentiated solely on the basis of alcohol reinforcement expectancies (Brown, Goldman & Christiansen, note 1).

Similar alcohol expectancies have been demonstrated among adolescents. Christiansen, Goldman and Inn. (1982) used a derivative of the AEQ and found a relatively stable alcohol expectancy structure across the 12 to 19 year-old age range. Additionally, within this population, expectancies were found to be predictive of differential patterns of adolescent drinking. When compared to demographic/background variables alcohol-related expectancies, "at least equalled and even added to the predictive power of background variables" in estimating drinking patterns, (Christiansen & Goldman, 1983).

Recent theoretical and empirical efforts in the arena of alcohol use and abuse have focused on the prevention of alcohol problems (e.g., Alden,

1982). An important key to such programs is accurate identification of high risk individuals. The best predictor set currently available for predicting alcohol consumption is demographic/background variables. If the predictive power of these variables could be enhanced, preventative programs could focus on a more select population.

Alcohol consumption frequently increases during college, and has been identified as a major problem impacting diverse areas of daily functioning (Cormier, Prefontaine, MacDonald & Stuart, 1982). If alcohol reinforcement expectancies could predict problematic drinking patterns in such a population or enhance the current predictor set, the practical and theoretical impact would be significant. From a theoretical vantage, anticipated reinforcement may be considered to have mediational characteristics. In contrast to background variables, such cognitions and their concommitent emtional consequences may be modifiable at the primary, secondary or tertiary stage of intervention.

To assess the utility of alcohol reinforcement expectancies a three stage analysis was conducted. This procedure was similar to that of Christiansen (Christiansen et al., 1983) in that is pits expectancies against background variables in a test of optimal prediction of specific drinking styles. In the first stage of analysis, drinking styles were defined as composites of alcohol use information (e.g., frequency, quantity and context of alcohol consumption). Next, demographic variables previously identified as related to drinking patterns were employed as predictors in a multiple regression analysis to predict to the defined drinking styles in the population. The third stage of data analysis was an assessment of the utility of alcohol reinforcement expectancies as predictors of problematic and

nonproblematic drinking styles. Expectancies were examined both independently and in conjunction with demographic variables for their strenght as predictors.

METHOD

Subjects

Subjects were 321 undergraduates at a large midwestern university. Approximately equal proportions of both sexes were represented in this population of 17 to 36 year-olds. Self-reported drinking patterns ranged from nondrinking to heavy daily drinking, with average consumption of alcohol at 2-3 days per week.

Procedure

Each subject completed a series of questionnaires within a one hour session. The Demographic Data Sheet (DDS) is a brief questionnaire requesting specific information previously identified as related to national drinking patterns (Cissen & Cahalan, 1974). The Alcohol Expectancy Questionnaire (AEQ) is a structured 90 item questionnaire concerning the potentially positive effects of alcohol consumption. Items are structured in an AGREE-DISAGREE format indicating whether a moderate amount of alcohol may produce a particular effect. (See Brown, Goldman, Inn & Anderson, 1980 for details). The third and final questionnaire completed by each subject was the Customary Drinking Record (CDR). The CDR is a self-report drinking form of two parts. The first section of the form, which is designed to facilitate accuracy, includes a calender depicting when and how much alcohol was consumed during the last weekend and previous week. The second portion of the CDR is composed of questions of current drinking pattern and drinking history. Specifically,

questions of frequency of alcohol consumption, quantity of alcohol typically consumed, context of drinking, illness from drinking, maximal amount of alcohol consumed at one sitting, alcohol preference and time of consumption. In addition to current drinking habits, the CDR requests information regarding history of drinking: age of first drink, past frequency of consumption, previous or current problems because of alcohol and family history of alcohol problems.

All three questionnaires were administered in one session by the experimentors in the classroom setting. Both verbal and written instructions were provided for each questionnaire. Following administration, questions were addressed and comments regarding the forms were encouraged. No identification information was requested on any questionnaires and subjects were assured of anonyminity.

RESULTS

Six expectancy scores were calculated from the Alcohol Expectancy Questionnaire: I) general, positive changes, II) entrancement of sexual experience, III) social and physical pleasure, IV) increased assertiveness, V) tension reduction, and VI) aroused with feelings of power. Items comprising each factor were summed on the basis of previous factor analysis of the normative data and reliability studies (Brown, Goldman, Inn & Anderson, 1980; Brown & Goldman, 1981; Brown, Goldman & Christiansen, note 1). Thus, for each subject six expectancy scores were defined and added to the subject's data base for use as predictor variables.

Drinking Styles

The drinking pattern variables of the Customary Drinking Record analyzed to determine the predominant drinking styles of the college population. Three factors accounting for 40.8% of the variance were retained and the remaining potential factors eliminated because of the significant drop in eigenvalues beyond the three factor solution (e.g., eigenvalues < 1.5). The three drinking style factors were rotated using the Varimax procedure to produce orthogonal factors.

As indicated by the factor loadings in Table 1, the first drinking style factor was determined by quantity and frequency of alcohol consumption, physical distress from drinking (e.g., hangovers, feeling nauseous) and contact with the law because of drinking (e.g., disorderly conduct, driving while under the influence of alcohol). Those who score high on this factor have a more abusive style of drinking and label their drinking pattern as heavy social drinking or problem drinking. Low scorers are infrequent or light drinkers who do not report personal problems because of alcohol consumption. The second drinking factor is contextually determined. High scores on this factor reflect drinking in less personal settings (e.g., bars, lounges, on the street). Low scorers on this factor tend to drink at home, with family or alone. The third factor extracted from the drinking variables was determined primarily by one variable, whether the individual has one or more family members who have received treatment for alcoholism. Personal alcohol related problems were not evident on this factor. Though prediction was attempted for all three factors, the predictability of Factor 1 scores were of most interest since this appears to be the nonproblem to problem drinking dimension.

Demographic Predictors

Demographic variables including sex, age, ethnicity, marital status, religiousity and number of family generations raised in the U.S. were used in predicting each of the above described drinking factors. For each factor a stepwise multiple regression analysis was conducted with demographic variables added to the prediction equation until the F test of its regression coefficient no longer exceeded the F for the .01 significance level. Results are presented in Table 2. The demographic characteristics of the subject were able to account for 27.1% of Factor 1 variance, 7.5% of Factor 2 variance and 4.6% of Factor 3 variance. Ethnic background, age, number of family generations in the U.S. and religiousity were the most consistently selected predictors.

Expectancies as Predictors

The six alcohol expectancies were utilized in identical multiple regression analyses. Table 3 presents the results of these analyses. The optimal multiple regression equations for Factors 1, 2 and 3 resulted in multiple Rs of .36, .19, .16, respectively with 13.3%, 3.7% and 2.5% of the factor variance accounted for. As with demographic predictors, variance of the contextual drinking factor (2) and history of alcohol treatment by a family member (3) were less predictable. In general, when considered independently, demographic variables were slightly better at predicting the three drinking factors than were alcohol expectancies.

To assess whether alcohol expectancies improve upon the currently used demographic predictors of drinking problems, alcohol expectancies and demographic variables were utilized jointly as predictor sets. When the three multiple regression analyses were left free to select optimal predictors from

demographic and expectancy variables, expectancies were included in all equations. As Table 4 displays, incorporation of both types of predictors increased multiple Rs to .571, .299 and .270, respectively. In the prediction of the main nonproblem-problem drinking dimension (Factor 1), the expectancy of relaxation/tension reduction served as the single best predictor with a variety of demographic and expectancy variables subsequently added to the predictor equation.

Prediction of Problematic Drinking

To assess the utility of alcohol expectancies in the identification of high risk individuals, a select portion of the population exhibiting excessive drinking was examined. Those subjects obtaining scores greater than one standard deviation above the mean on drinking style factor 1 were classified as excessive drinkers. Using multiple regression procedures identical to those previously described, optimal background and expectancy predictors were selected. Results are displayed in Table 5. Within the restricted of this population, the multiple R of background predictors is .316, of expectancies is .201 and of combined background-expectancies is .343. The expectancy of tension reduction is second only to sex of subject in the prediction of problematic drinkers.

DISCUSSION

The present study serves to define the major drinking dimension factors of college students and demonstrates the utility of reinforcement expectancies in identifying drinking patterns.

Findings demonstrate that expectancies and demographic variables are valuable predictors of drinking pattern. Further, it is noteworthy that expectancies were incorporated in the prediction of drinking patterns even when demographics were possible predictors. Thus, expectancies add to the predictive power of demographics in identifying drinking styles, especially the moderated-excessive/problematic dimension.

Further, the results of the present study overlap with previous adolescent research in a consistent fashion. Christiansen (Christiansen et al., in press) demonstrated that expectancies add independent information to prediction equations with adolescents and also that expectancies enhance the predictability of adolescent drinking styles. Such consistency, when coupled with the modifiability of cognitions, has significance for preventative strategies. Both at the individual and group or social level, educational training experiences may facilitate alteration of beliefs about the actual effects of alcohol and one's own role in the experience during drinking. In particular, the social learning experiences associated with drinking may influence the development of problematic drinking patterns and rigidify certain reinforcement expectancies independent of alcohol's pharmacologic effects.

Table 1. Drinking Style Factors:
Factor loadings for varimax
rotated factor solution

Items	Factor 1	Factor 2	Factor 3
Type of alcohol used (Wine-Beer-Liquor)	.006	.209	-.050
Companions when drinking (alone-family-friends-strangers)	.088	.341	-.060
Setting of usual drinking (home-friends-party-bar)	-.040	.764	.281
History of illness with drinking (hangovers, nauseous, vomiting)	.542	.043	.156
Most alcohol consumed at one time during last 6 months	.723	.189	-.233
Number of years of drinking alcohol	.543	-.169	.296
Frequency of alcohol consumption	.736	.075	.030
Amount typically consumed	.721	.169	-.022
Trouble with the law because of drinking	.327	-.036	.050
History of Binge drinking	.240	.115	.073
Family member treated for alcohol problems	.073	-.020	.447
Label of own drinking (nondrinkers → alcoholic)	.788	-.033	.047

Table 2. Prediction of Drinking Factors by Demographic Variables

Predictor Variables*	Successive Multiple Rs	Beta	F Statistic
FACTOR 1			
Ethnicity	.310	.336	26.903
Male-Female	.432	-.284	28.863
Religious Participation	.467	.250	23.409
Religious Background	.502	-.167	21.146
Family Generations in U.S.	.517	-.125	18.173
Age	.520	-.064	15.379
Constant = 11.591			($p < .01$)
FACTOR 2			
Ethnicity	.165	.165	7.073
Family Generations in U.S.	.216	-.140	6.178
Age	.241	-.130	5.202
Religious Participation	.266	.128	4.764
Religious Background	.274	-.072	4.062
Constant = 3.461			($p < .01$)
FACTOR 3			
Age	.214	.214	12.186
Constant = -.385			($p < .01$)

*In order of stepwise inclusion in multiple regression equacion

Table 3. Prediction of Drinking Factors
by Alcohol Expectancies

Predictor Variables*	Successive Multiple Rs	Beta	F Statistic
FACTOR 1			
Relaxation/Tension Reduction	.323	.242	6.763
Sexual Enhancement	.345	-.203	7.155
Social/Physical Pleasure	.365	.217	4.999
Constant = 6.858			($p < .01$)
FACTOR 2			
Social/Physical Pleasure	.128	.220	5.311
Global Positive Changes	.173	-.259	4.904
Social Assertion	.192	.144	4.023
Constant = 2.335			($p < .01$)
FACTOR 3			
Social/Physical Pleasure	.110	-.288	3.877
Relaxation/Tension Reduction	.160	.213	4.151
Constant = .635			($p < .01$)

*In order of stepwise inclusion in multiple regression equation

Table 4. Prediction of Drinking Factors
by Demographic & Expectancy Variables

Predictor Variables*	Successive Multiple Rs	Beta	F Statistic
FACTOR 1			
Relaxation/Tension Reduction Expectancy	.323	.171	29.505
Male-Female	.425	-.260	27.766
Ethnicity	.491	.278	26.590
Religious Participation	.515	.192	22.589
Family Generations in U.S.	.539	-.126	20.365
Religious Background	.553	-.127	18.160
Family History of Alcoholism	.563	.101	16.352
Sexual Enhancement Expectancy	.567	-.109	14.557
Social/Physical Pleasure Expectancy	.571	.133	13.176
Constant = 6.405			(p < .01)
FACTOR 2			
Ethnicity	.165	.136	7.073
Family Generations in U.S.	.216	-.145	6.178
Age	.242	-.130	5.202
Religious Participation	.266	.095	4.764
Social/Physical Pleasure Expectancy	.277	.216	4.135
Global, Positive Change Expectancy	.299	-.177	4.046
Constant = 3.196			(p < .01)
FACTOR 3			
Age	.214	.220	12.186
Social/Physical Pleasure Expectancy	.234	-.303	7.271
Relaxation/Tension Reduction Expectancy	.270	.252	6.599
Constant = -.224			(p < .01)

*In order of stepwise inclusion in multiple regression equation

Table 5. Prediction of Problematic Drinking In College Students

Predictors	Beta Weights	Successive Multiple Rs
Demographic Variables		
Male-Female	-.263	.255
Ethnicity	.122	.287
Religious Participation	.118	.299
Age	-.105	.316
Constant = .580		
Alcohol Expectancies		
Tension Reduction	.231	.165
Social and Physical Pleasure	-.126	.176
Arousal with Feelings of Power	.153	.187
Sexual Enhancement	-.112	.201
Constant - .661		
Combined Predictor Set		
Male - Female	-.244	.255
Tension Reduction Expectancy	.251	.294
Ethnicity	.100	.310
Family Generations in U.S.	-.100	.320
Religious Participation	.100	.331
Social and Physical Pleasure	-.160	.343
Constant = .195		

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